

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/002946

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ A61K45/00, 31/166, 31/454, 31/505, 45/06, A61P25/06,
43/00//C07D239/42, 401/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ A61K45/00, 31/166, 31/454, 31/505, 45/06, C07D239/42, 401/06

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2005

Kokai Jitsuyo Shinan Koho 1971-2005 Toroku Jitsuyo Shinan Koho 1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

REGISTRY/CA/MEDLINE/EMBASE/BIOSIS (STN), JSTPlus/JMEDPlus (JOIS)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	TERRON, J.A., Is the 5-HT ₇ receptor involved in the pathogenesis and prophylactic treatment of migraine?, Eur.J.Pharmacol., 2002, Vol.439, pages 1 to 11	1-8
A	TERRON, J.A., Involvement of 5-HT ₇ receptor in Craniovascular Vasodilatation: Potential Impact in Migraine, Proc.West.Pharmacol.Soc., 1998, Vol.41, pages 247 to 251	1-8
A	BONHAUS D.W. et al., RS-127445: a selective, high affinity, orally bioavailable 5-HT _{2B} receptor antagonist, Brit.J.Pharmacol., 1999, Vol.127, pages 1075 to 1082	1-8



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

02 June, 2005 (02.06.05)

Date of mailing of the international search report

21 June, 2005 (21.06.05)

Name and mailing address of the ISA/

Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/002946

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LOVELL, P.J. et al., A Novel, Potent, and Selective 5-HT ₇ Antagonist: (R)-3-(2-(2-(4-Methylpiperidin-1-yl)-ethyl) pyrrolidine-a sulfonyl) phenol (SB-269970), J.Med.Chem., 2000, Vol.43, pages 342 to 345	1-8
A	JP 11-506468 A (FUJISAWA PHARM CO LTD), 08 June, 1999 (08.06.99), & WO 96/39382 A1	1-8
A	WO 01/68585 A1 (FUJISAWA PHARM CO LTD), 20 September, 2001 (20.09.01), & EP 1264820 A1 & JP 2001-567683 A	1-8

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 9, 10
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 9 and 10 pertain to methods for treatment of the human body by therapy and thus relate to a subject matter which this International Searching Authority is not required, under the provisions of Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

*Scope of international search

Even though the statement in the description is discussed, it seems unclear what specific compounds other than the compounds of the formula (I) etc. presented in the description are involved in the scopes of the terms "a double antagonist to 5-HT_{2B} and 5-HT₇ receptors", "an antagonist to 5-HT_{2B} receptor" and "an antagonist to 5-HT₇ receptor" as set forth in claims 1 to 8 and what are not. Thus, these claims make the scope of the present invention unclear and, therefore, are not disclosed in the meaning within PCT Article 5. Moreover, these claims are not supported by the disclosure in the description in the meaning within PCT Article 6 and do not comply with the requirement of clearness too.

In this international search report, therefore, prior art documents were searched for based on the compounds specifically presented in the description.

A. 発明の属する分野の分類 (国際特許分類 (IPC)) Int.Cl. ⁷ A61K45/00, 31/166, 31/454, 31/505, 45/06, A61P25/06, 43/00 // C07D239/42, 401/06		
B. 調査を行った分野 調査を行った最小限資料 (国際特許分類 (IPC)) Int.Cl. ⁷ A61K45/00, 31/166, 31/454, 31/505, 45/06, C07D239/42, 401/06		
最小限資料以外の資料で調査を行った分野に含まれるもの 日本国実用新案公報 1922-1996年 日本国公開実用新案公報 1971-2005年 日本国実用新案登録公報 1996-2005年 日本国登録実用新案公報 1994-2005年		
国際調査で使用した電子データベース (データベースの名称、調査に使用した用語) REGISTRY/CA/MEDLINE/EMBASE/BIOSIS (STN), JSTPlus/JMEDPlus (JOIS)		
C. 関連すると認められる文献		
引用文献の カテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する 請求の範囲の番号
A	TERRON, J. A., Is the 5-HT ₇ receptor involved in the pathogenesis and prophylactic treatment of migraine? , Eur. J. Pharmacol., 2002, Vol.439, pp.1-11	1-8
A	TERRON, J.A., Involvement of 5-HT ₇ receptor in Craniovascular Vasodilatation: Potential Impact in Migraine, Proc. West. Pharmacol. Soc., 1998, Vol.41, pp.247-251	1-8
<input checked="" type="checkbox"/> C欄の続きにも文献が列挙されている。 <input type="checkbox"/> パテントファミリーに関する別紙を参照。		
* 引用文献のカテゴリー 「A」 特に関連のある文献ではなく、一般的技術水準を示すもの 「E」 国際出願日前の出願または特許であるが、国際出願日以後に公表されたもの 「L」 優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献 (理由を付す) 「O」 口頭による開示、使用、展示等に言及する文献 「P」 国際出願日前で、かつ優先権の主張の基礎となる出願日の後に公表された文献 「T」 国際出願日又は優先日後に公表された文献であって出願と矛盾するものではなく、発明の原理又は理論の理解のために引用するもの 「X」 特に関連のある文献であって、当該文献のみで発明の新規性又は進歩性がないと考えられるもの 「Y」 特に関連のある文献であって、当該文献と他の1以上の文献との、当業者にとって自明である組合せによって進歩性がないと考えられるもの 「&」 同一パテントファミリー文献		
国際調査を完了した日 02.06.2005	国際調査報告の発送日 21.6.2005	
国際調査機関の名称及びあて先 日本国特許庁 (ISA/JP) 郵便番号100-8915 東京都千代田区霞が関三丁目4番3号	特許庁審査官 (権限のある職員) 清野 千秋 電話番号 03-3581-1101 内線 3452	4C 3127

C (続き) . 関連すると認められる文献		
引用文献の カテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する 請求の範囲の番号
A	BONHAUS D. W. et al, RS-127445: a selective, high affinity, orally bioavailable 5-HT _{2B} receptor antagonist, Brit. J. Pharmacol., 1999, Vol.127, pp.1075-1082	1-8
A	LOVELL, P. J. et al, A Novel, Potent, and Selective 5-HT ₇ Antagonist: (R)-3-(2-(2-(4-Methylpiperidin-1-yl)-ethyl) pyrrolidine- α -sulfonyl) phenol (SB-269970), J. Med. Chem., 2000, Vol.43, pp.342-345	1-8
A	JP 11-506468 A (FUJISAWA PHARM CO LTD) 1999.06.08, & WO 96/39382 A1	1-8
A	WO 01/68585 A1 (FUJISAWA PHARM CO LTD) 2001.09.20, & EP 1264820 A1 & JP 2001-567683 A	1-8

***国際調査の範囲について**

請求の範囲1～8に記載された「...5-HT2B及び5-HT7受容体二重拮抗剤」「...5-HT2B拮抗剤」「5-HT7受容体拮抗剤」なる文言は、明細書の記載を検討しても、明細書記載の式(I)等の化合物以外に、具体的にいかなる化合物を包含し、また、包含しないか明確であるとはいえないから、本願発明の範囲を不明確にするものであり、PCT5条の意味での開示を欠き、またPCT6条の意味での明細書の開示による裏付け及び明確性の要件も欠いている。

そこで、この国際調査報告では、明細書に具体的に記載された化合物に基づいて先行技術文献調査を行った。